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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CERVETTI, DAVID GARCIA

ART UNIT	PAPER NUMBER
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2136

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,159

Applicant(s)

CHOU ET AL.

Examiner

David G. Cervetti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/07/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

PD

DETAILED ACTION

1. Claims 1-34 are pending and have been examined.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: all reference characters (figure 1), 346 (figure 3), 400 (figure 4), 502, 512 (figure 5), 602, 614 (figure 6), 700, 704 (figure 7A), 732, 734 (figure 7B).

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

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notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 204 (page 23, describing figure 7, perhaps 704 was intended). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: "IP" (page 3, line 1), "SCSI" (page 3, line 2), "VHSIC" (page 8, paragraph 18), "rest" (page 11, paragraph 24, perhaps "reset" was intended). While well known in the art, these terms have not been defined.

6. The disclosure is objected to because of the following informalities: "(0034) Referring to Figure 4, the positions of each field within the packets is provided in bits words. When there are two numbers, the number in parenthesis is given for a packet without a global router header (GRH), and the other number is given for a packet that does not include a GRH" (pages 15-16, paragraph 34). Both numbers, the one in parenthesis and the other number, are given for a packet without/does not include a GRH. Appropriate correction is required.

Claim Objections

7. Claims 24-31 are objected to because of the following informalities: "the system of claim". Claim 22 is an apparatus. Claim 23 is a system. Examiner interpreted these claims as referring to claim 22, "the apparatus of claim", since the limitations found are related to claim 22 (an apparatus, authentication data, and subnet management packets) and not to claim 23 (a system). Appropriate correction is required.

8. Claim 32 is objected to because of the following informalities: it claims the same subject matter as claim 21, and is also dependent on claim 20. Perhaps it was intended to be dependent on claim 31. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 26, 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 recites the limitation "set of **associated attributes**, the set of **attributes**" (emphasis added) in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 33 recites the limitation "storing a **description of a circuit, said circuit**" (emphasis added) in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 22, 24-31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 22 states "means for detecting, informing, refraining, receiving, and sending". These limitations are considered non-statutory subject matter because they consist on software code for detecting, informing, refraining, receiving, and sending (page 19, paragraph [43]).

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13. Claims 33-34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. These claims state “a machine readable medium” and “a computer readable medium”. The specification recites on page 9: “For example, a machine-readable medium includes read only memory (ROM); random access memory (RAM); magnetic disk storage media; optical storage media; flash memory devices; electrical, optical, acoustical or other form of propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.); etc.”. A propagated signal is considered non-statutory subject matter, “electrical, optical, acoustical or other form of propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.); etc” is considered non-statutory subject matter.

14. To expedite a complete examination of the application, the claims rejected under 35 U.S.C. 101 (non-statutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Infiniband Trade Association (NPL Infiniband Architecture Specification Volume 1, hereinafter Infiniband).

Regarding claim 1, Infiniband teaches a system to support management operations associated with an interconnect device (page 641), the system comprising: a configuration switch to receive an operator command to reset authentication data that facilitates authorization of the management operations from an operator, and to generate a reset signal in response to the operator command (pages 654, 682-683); and a port of the interconnect device, coupled to the configuration switch, to maintain the authentication data and to reset the authentication data upon receiving the reset signal from the configuration switch (pages 654, 682-683). Infiniband does not expressly teach a configuration switch. However, Infiniband teaches a subnet manager residing on a port, router, or switch. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a switch. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches providing subnet configuration, monitoring, and query of nodes within a subnet (page 642).

Regarding claim 2, Infiniband teaches wherein the port is to store the authenticated data together with a set of associated attributes (pages 654, 682-683).

Regarding claim 3, Infiniband teaches wherein: the port is a management port (page 682-683); the authentication data is a management key (page 682-683); and the set of associated attributes includes a protection attribute specifying a level of protection required for performing a particular management operation and an expiration attribute controlling expiration of the management key (page 654-658).

Regarding claim 4, Infiniband teaches a sub-network (subnet) manager, coupled to the interconnect device, to store a copy of the management key and to include the management key into a Subnet Management Packet (SMP) sent to the management port for a comparison with the management key stored in the management port (page 687-700).

Regarding claim 5, Infiniband teaches wherein the management port comprises: an initialization module to store the authentication data (page 657); a decoder to store a first copy of the authentication data (page 657). Infiniband does not expressly teach storing a second copy and a third copy of the authentication data. However, Infiniband teaches sharing the authentication data to provide redundancy (page 657).

Regarding claim 6, Infiniband teaches wherein the decoder is to receive the reset signal from the configuration switch (page 657).

Regarding claim 7, Infiniband does not expressly disclose wherein the decoder is to communicate the reset signal to any one of the initialization module, the management agent and the configuration interface. However, Infiniband teaches sharing the

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authentication data to provide redundancy (page 657). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to communicate the reset signal to any one of the initialization module, the management agent and the configuration interface. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches to share the authentication data across subnet managers to provide for data redundancy (page 657).

Regarding claim 8, Infiniband teaches a method to support management operations associated with an interconnect device (page 641), the method comprising: receiving a reset signal from a configuration switch at a decoder of a management port, the reset signal indicating that an operator requested a reset of authentication data that facilitates authorization of the management operations (pages 654, 682-683); and resetting a copy of the authentication data that is stored in the decoder in response to the reset signal (pages 654, 682-683). Infiniband does not expressly teach a configuration switch. However, Infiniband teaches a subnet manager residing on a port, router, or switch. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a switch. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches providing subnet configuration, monitoring, and query of nodes within a subnet (page 642).

Regarding claim 9, Infiniband teaches receiving a management packet from a sub-network (subnet) manager with an update value for the authentication data (pages 654-658); and setting the copy of the authentication data stored in the decoder to the update value (pages 654-658).

Regarding claim 10, Infiniband teaches resetting a corresponding copy of the authentication data upon receiving the reset signal (pages 654-658). Infiniband does not expressly disclose communicating the reset signal to any one of an initialization module, a management agent and a processor subsystem interface. However, Infiniband teaches sharing the authentication data to provide redundancy (page 657). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to communicate the reset signal to any one of the initialization module, the management agent and the configuration interface. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches to share the authentication data across subnet managers to provide for data redundancy (page 657).

Regarding claim 11, Infiniband teaches wherein the authentication data is a management key (pages 682-683).

Regarding claim 12, Infiniband teaches a method to support management operations associated with an interconnect device (page 641), the method comprising: detecting that a reset of authentication data residing in a management port of the interconnect device is required (page 657); informing an operator that the reset is required (pages 654-658); subsequent to the receipt of the message, sending to the management port an update SMP with a request to set authentication data residing in each unit of the interconnect device to an update value (pages 654-658). Infiniband does not expressly teach refraining from sending subnet management packets (SMPs) to the management port upon detecting that the reset is required; receiving a message from the operator that indicates that the authentication data has been reset. However,

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Infiniband teaches sharing the authentication data to provide redundancy (page 657) and rerouting (pages 645-647). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to communicate the reset signal to any one of the initialization module, the management agent and the configuration interface, refraining from sending packets to a port that needs to be reset, and to send a message once reset is completed. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches to share the authentication data across subnet managers to provide for data redundancy (page 657) and because it was conventional and well known to reroute traffic or refrain from sending traffic to a node that needs to be reset, and to inform the public/operator once the node is reset.

Regarding claim 22, Infiniband teaches an apparatus to support management operations associated with an interconnect device (page 641), the apparatus comprising: means for detecting that a reset of authentication data residing in a management port of the interconnect device is required (page 657); means for informing an operator that the reset is required (pages 654-658); means for sending to the management port an update SMP with a request to set authentication data residing in each unit of the interconnect device to an update value (pages 654-658). Infiniband does not expressly teach means for refraining from sending subnet management packets (SMPs) to the management port upon detecting that the reset is required; means for receiving a message from the operator that indicates that the authentication data has been reset. However, Infiniband teaches sharing the authentication data to provide redundancy (page 657) and rerouting (pages 645-647). Therefore, it would have

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been obvious to one having ordinary skill in the art at the time the invention was made to communicate the reset signal to any one of the initialization module, the management agent and the configuration interface, refraining from sending packets to a port that needs to be reset, and to send a message once reset is completed. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches to share the authentication data across subnet managers to provide for data redundancy (page 657) and because it was conventional and well known to reroute traffic or refrain from sending traffic to a node that needs to be reset, and to inform the public/operator once the node is reset.

Regarding claim 23, Infiniband teaches a system (page 641) comprising: an interconnect device to maintain authentication data in a plurality of units, the authentication data facilitating management operations associated with the interconnect device (pages 654-658); a configuration switch, coupled to the interconnect device, to cause a reset of authentication data residing in a management port of the interconnect device (pages 654-658); and a sub-network (subnet) manager, coupled to the interconnect device, to detect that the reset of authentication data residing in the management port is required (page 657) , to inform an operator that the reset is required (pages 654-658), and to send to the management port an update data packet with a request to set the authentication data residing in each of the plurality of units of the interconnect device to an update value (pages 654-658). Infiniband does not expressly teach to receive a message from the operator that indicates that the authentication data has been reset. However, Infiniband teaches sharing the

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authentication data to provide redundancy (page 657) and rerouting (pages 645-647).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to communicate the reset signal to any one of the initialization module, the management agent and the configuration interface, refraining from sending packets to a port that needs to be reset, and to send a message once reset is completed. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches to share the authentication data across subnet managers to provide for data redundancy (page 657) and because it was conventional and well known to reroute traffic or refrain from sending traffic to a node that needs to be reset, and to inform the public/operator once the node is reset.

Regarding claims 13 and 24, Infiniband teaches wherein: the SMPS are virtual lane 15 (VL 15) packets (page 100); and the authentication data is a management key (pages 682-683).

Regarding claims 14 and 25, Infiniband teaches wherein each SMP sent to the management port includes authentication data that matches authentication data residing in a decoder of the management port unless the authentication data residing in the decoder is set to a predetermined value (pages 654-658).

Regarding claims 15 and 26, Infiniband teaches wherein the authentication data is stored in the management port with a set of associated attributes, the set of associated attributes including a protection attribute specifying a level of protection required for performing a particular management operation and an expiration attribute controlling expiration of the authentication data (pages 654-658).

Regarding claims 16 and 27, Infiniband teaches wherein detecting that the reset is required comprises: sending a SMP containing a copy of the authentication data maintained by the subnet manager to the management port (pages 654-658); and receiving a trap indicating that the management port has invalidated the SMP due to a mismatch between the authentication data included the SMP and the authentication data maintained by the management port and further indicating that the expiration attribute is set to a value that prevents expiration of the authentication data (pages 683-686).

Regarding claims 17 and 28, Infiniband teaches wherein detecting that the reset is required comprises: sending an initial SMP containing a copy of the authentication data maintained by the subnet manager to the management port; determining that a response to the initial SMP has not been received from the management port for a predefined time period; re-sending the initial SMP for a predetermined number of times without receiving a response; and determining that the failure to receive the response may be caused by a mismatch between the authentication data included in the initial SMP and the authentication data maintained by the management port (pages 247-254).

Regarding claims 18 and 29, Infiniband teaches wherein the update value is the value of authentication data stored in a database of the subnet manager (pages 654-658).

Regarding claims 19 and 30, Infiniband does not expressly disclose wherein: the management port stores multiple copies of the authentication data; and only one copy from the multiple copies has been reset in response to the operator command.

However, Infiniband teaches sharing the authentication data to provide redundancy (page 657) and rerouting (pages 645-647). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to store multiple copies of authentication data. One of ordinary skill in the art would have been motivated to do so because it was well known to provide redundancy in communications between nodes so the system keeps functioning in the event of failure.

Regarding claims 20 and 31, Infiniband teaches determining the update value for the update SMP (pages 654-658).

Regarding claims 21 and 32, Infiniband teaches upon receiving the message indicating that the authentication data maintained by the management port has been reset, sending to the management port a read SMP requesting a current value of the authentication data maintained by the management Port; receiving the current value of the authentication data maintained by the management Port from the management port; designating the received value as the update value; and updating authentication data in a database of the subnet manager with the received value (pages 654-658). Infiniband does not expressly disclose the same order or number of steps. However, it would have been obvious to one of ordinary skill in the art to request a read upon receiving indication of data reset to maintain redundancy and updated values to avoid mismatch errors. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to, upon receiving indication of data reset, requesting a read and update the current authentication data. One of ordinary skill in the art would

have been motivated to do so because it was well known to provide redundancy in communications between nodes so the system keeps functioning in the event of failure.

17. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Infiniband, and further in view of Susnow et al. (US Patent Application Publication: 2002/0159385, hereinafter Susnow).

Regarding claim 33, Infiniband teaches a decoder to receive a reset signal from a configuration switch, to reset a copy of the authentication data that is stored in the decoder in response to the reset signal, and to receive a management packet from a sub-network (subnet) manager with an update value for authentication data residing in a plurality of units of an interconnect device (pages 654-658); and a subnet management agent to receive the management packet from the decoder and to control the update of the authentication data residing in each of the plurality of units (pages 654-658).

Infiniband does not expressly teach a machine-readable medium storing a description of a circuit and a plurality of units. However, Infiniband teaches sharing the authentication data to provide redundancy (page 657) and rerouting (pages 645-647); and Susnow teaches software for communication between nodes using a switched fabric (paragraph 41). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to communicate the reset signal to any one of the initialization module, the management agent and the configuration interface, refraining from sending packets to a port that needs to be reset, and to send a message once reset is completed, and to implement it as software. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches to share the authentication

data across subnet managers to provide for data redundancy (page 657) and because it was conventional and well known to reroute traffic or refrain from sending traffic to a node that needs to be reset, and to inform the public/operator once the node is reset.

Regarding claim 34, Infiniband teaches a method comprising: detecting that a reset of authentication data residing in a management port of the interconnect device is required (page 657); informing an operator that the reset is required (pages 654-658); subsequent to the receipt of the message, sending to the management port an update SMP with a request to set authentication data residing in each unit of the interconnect device to an update value (pages 654-658). Infiniband does not expressly teach a computer readable medium comprising executable instructions; refraining from sending subnet management packets (SMPs) to the management port upon detecting that the reset is required; receiving a message from the operator that indicates that the authentication data has been reset. However, Infiniband teaches sharing the authentication data to provide redundancy (page 657) and rerouting (pages 645-647); and Susnow teaches software for communication between nodes using a switched fabric (paragraph 41). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to communicate the reset signal to any one of the initialization module, the management agent and the configuration interface, refraining from sending packets to a port that needs to be reset, and to send a message once reset is completed, and to implement it as software. One of ordinary skill in the art would have been motivated to do so because Infiniband teaches to share the authentication data across subnet managers to provide for data redundancy (page 657)

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and because it was conventional and well known to reroute traffic or refrain from sending traffic to a node that needs to be reset, and to inform the public/operator once the node is reset.


Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David G. Cervetti whose telephone number is (571) 272-5861. The examiner can normally be reached on Monday-Friday 7:00 am - 5:00 pm, off on Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DGC


AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100